UNITED STATES PATENT AND TRADEMARK OFFICE

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

PTOL-90A (Rev. 04/07)

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *21 August 2009*.

2a)☒ This action is **FINAL**.　　　　2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,5-7,9 and 10* is/are pending in the application.

　　4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,5-7,9 and 10* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

　　Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

　　Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

　　a)☒ All　b)☐ Some * c)☐ None of:

　　　1.☒ Certified copies of the priority documents have been received.

　　　2.☐ Certified copies of the priority documents have been received in Application No. _____.

　　　3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

　　* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO/SB/08)
　　Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
　　Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application

6)☐ Other: _____.

DETAILED ACTION

Status of Claims: Claims 1, 5-7, 9, and 10 are currently pending.

Claim Objections

1.   Claim 1 objected to because of the following informalities: Claim 1 lines 16-17 as

amended recites "the service processing unit" which appears to refer back to the service

processing units. Appropriate correction is required. There is a similar problem in claim

7 lines 7, 18-19.

Claim Rejections - 35 USC § 103

1.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

2.   The factual inquiries set forth in *Graham* **v.** *John Deere Co.,* 383 U.S. 1, 148

USPQ 459 (1966), that are applied for establishing a background for determining

obviousness under 35 U.S.C. 103(a) are summarized as follows:

    1.   Determining the scope and contents of the prior art.
    2.   Ascertaining the differences between the prior art and the claims at issue.
    3.   Resolving the level of ordinary skill in the pertinent art.
    4.   Considering objective evidence present in the application indicating
            obviousness or nonobviousness.

3.   **Claims 1, 5-7, 9, 10** are rejected under 35 U.S.C. 103(a) as being unpatentable

over Applicant Admitted Prior Art (AAPA) in view of Parruck et al. (7,369,574).

        Regarding claim 1, AAPA discloses a synchronous digital hierarchy tributary

module supporting service processing, including a Synchronous Digital Hierarchy (SDH)

tributary processing unit and a service processing unit (see Fig. 1); wherein the service

processing unit connected with the SDH tributary processing unit respectively, for

mapping and unmapping corresponding service signals **(paragraph [0003] lines 21-**

22); the SDH tributary processing unit is for multiplexing and demultiplexing service

signals in an SDH signal **(paragraph [0003] lines 20-21)**; wherein the SDH tributary

processing unit and the service processing unit are disposed on one board **(see Fig. 1)**;

the service processing unit being connected to a local interface **(paragraph [0003]**

lines 21-22); the tributary module further adapted to transfer a service signal from the

local interface to the service processing unit for mapping and transfer an unmapped

service signal from the service processing unit to the local interface **(see paragraph**

[0003] lines 23-24).

Although AAPA suggests that the SDH separates/divides the channel into

several time slots of different levels by time division multiplexing for transporting a

different service for each time slot (paragraph [0003] lines 14-15) and SDH tributary unit

and service processing unit are disposed on one board, AAPL does not explicitly

suggest different services corresponding to different service processing units and

multiple different service processing units disposed on one board with the SDH

tributary. However, Parruck et al. from the same or similar field of endeavor **(see Fig. 4-**

5; line card 103 (similar to Fig. 3) processes ATM, packets and then delivers to

switch fabric for transporting to line card 101; Line card 101 (Fig. 5) processes

the cells and packets; the framer (SONET/SDH) then maps/demaps and then

inputs to the multiple cross processing units (121, 122) in which it connects to

the local interface) discloses different services corresponding to different service

processing units **(Fig. 3; 17 and 18)** and multiple different service processing units are

disposed on one board **(Fig. 3; ATM processing circuit 17 and packet processing**

circuit 18 can be disposed on one multi-service line card 12). AAPA further may not

explicitly suggest the tributary module further includes a multiple service cross

processing unit which is used to implement interconnection among different services;

the service processing units being connected to a local interface through the multiple

service cross processing unit; and the multiple service cross processing unit being

adapted to interconnect service signals unmapped by the at least two service

processing units. However, Parruck et al. further suggest the tributary module further

includes a multiple service cross processing unit which is used to implement

interconnection among different services **(see Fig. 1; cross processing unit 16**

interconnects among ATM service and packet service), the service processing units

being connected to a local interface through the multiple service cross processing unit

(see Fig. 3; units 17, 18 being connected to cables 14, 15 via the TDM); and the

multiple service cross processing unit being adapted to interconnect service signals

unmapped by the at least two service processing units **(see Fig. 3)**. Therefore, it would

have been obvious to one of ordinary skill in the art to utilize the teaching of Parruck et

al. to employ multiple different service processing units (ATM and packet) in one line

card (on a board) in the AAPA and further to implement a cross (TDM) processing unit

to interconnect the different service processing units. One of ordinary skill in the art

would have motivated to do so provide a smooth and easy migration from one type of

traffic to the next without using a different line card (col. 3 lines 18-21). The motivation

or suggestion would have been to reduce costs and facilitate high speed operation (see

abstract).

Regarding claim 5, AAPA further suggest wherein a cross module of a SDH

equipment node time-division multiplexes multiple service SDH signals into one SDH

signal (see Fig. 1). Parruck et al. also disclose a cross module of a SDH equipment

node time-division multiplexes multiple service SDH signals into one SDH signal (Fig. 5;

SERDES multiplex/demultiplex signals from the ATM processing unit 17and packet

processing unit 18 (Fig. 3) into OC 192).

Regarding claim 6, AAPA further suggest the SDH tributary processing unit for

multiplexing different services being multiplexed in different time slots **(paragraph**

[0003] lines 14-15), and the cross module of the SDH equipment node transmits the

signals of different time slots to corresponding line modules or other tributary modules

(Fig. 1). Parruck et al. further disclose wherein the services to be sent from the local to

the SDH side are mapped by the service processing units respectively (Fig. 3). Parruck

et al. also suggest framer 123 which includes demapper (mapper for other way) for

separating ATM cells (Fig. 3, 17) and MPLS packets (Fig. 3, 18) and the TDM

(SERDES) (cross) to connect to the framer 123 (Fig. 5 and col. 13 lines 59-61).

Regarding claim 7, AAPA discloses an SDH equipment node using the

synchronous digital hierarchy tributary module, including a plurality of line modules, a

cross module connected with the line modules respectively and a plurality of SDH

tributary modules connected with the cross module respectively **(see Fig. 1)**; wherein

the SDH tributary module comprises an SDH tributary processing unit and a service

processing unit connected with the SDH tributary processing unit respectively **(see Fig.**

1), the service processing unit being for mapping and unmapping corresponding service

signal **(paragraph [0003] lines 21-22)**, and the SDH tributary processing unit being for

multiplexing and demultiplexing service signals in an SDH signal **(paragraph [0003]**

lines 20-21); wherein the SDH tributary processing unit and the service processing unit

are disposed on one board **(see Fig. 1)**; the service processing unit being connected to

a local interface **(paragraph [0003] lines 21-22)**; the tributary module further adapted to

transfer a service signal from the local interface to the service processing unit for

mapping and transfer an unmapped service signal from the service processing unit to

the local interface **(see paragraph [0003] lines 23-24)**.

Although AAPA suggests that the SDH separates/divides the channel into

several time slots of different levels by time division multiplexing for transporting a

different service for each time slot (paragraph [0003] lines 14-15) and SDH tributary unit

and service processing unit are disposed on one board, AAPL does not explicitly

suggest different services corresponding to different service processing units and

multiple different service processing units disposed on one board with the SDH

tributary. However, Parruck et al. from the same or similar field of endeavor **(see Fig. 4-**

5; line card 103 (similar to Fig. 3) processes ATM, packets and then delivers to

switch fabric for transporting to line card 101; Line card 101 (Fig. 5) processes

the cells and packets; the framer (SONET/SDH) then maps/demaps and then

inputs to the multiple cross processing units (121, 122) in which it connects to

the local interface) discloses different services corresponding to different service

processing units **(Fig. 3; 17 and 18)** and multiple different service processing units are

disposed on one board **(Fig. 3; ATM processing circuit 17 and packet processing**

circuit 18 can be disposed on one multi-service line card 12) and the module

includes a plurality of local interfaces **(Fig. 3 lines 14, 15)**. AAPA further may not

explicitly suggest the tributary module further includes a multiple service cross

processing unit which is used to implement interconnection among different services;

the service processing units being connected to a local interface through the multiple

service cross processing unit; and the multiple service cross processing unit being

adapted to interconnect service signals unmapped by the at least two service

processing units. However, Parruck et al. further suggest the tributary module further

includes a multiple service cross processing unit which is used to implement

interconnection among different services **(see Fig. 1; cross processing unit 16**

interconnects among ATM service and packet service), the service processing units

being connected to a local interface through the multiple service cross processing unit

(see Fig. 3; units 17, 18 being connected to cables 14, 15 via the TDM); and the

multiple service cross processing unit being adapted to interconnect service signals

unmapped by the at least two service processing units **(see Fig. 3)**. Therefore, it would

have been obvious to one of ordinary skill in the art to utilize the teaching of Parruck et

al. to employ multiple different service processing units (ATM and packet) in one line

card (on a board) in the AAPA and further to implement a cross (TDM) processing unit

to interconnect the different service processing units. One of ordinary skill in the art

would have motivated to do so provide a smooth and easy migration from one type of traffic to the next without using a different line card (col. 3 lines 18-21). The motivation or suggestion would have been to reduce costs and facilitate high speed operation (see abstract).

Regarding claim 9, AAPA further suggest wherein the cross module of a SDH equipment node time-division multiplexes multiple service SDH signals into one SDH signal (see Fig. 1). Parruck et al. also disclose a cross module of a SDH equipment node time-division multiplexes multiple service SDH signals into one SDH signal (Fig. 5; SERDES multiplex/demultiplex signals from the ATM processing unit 17and packet processing unit 18 (Fig. 3) into OC 192).

Regarding claim 10, AAPA further suggest the SDH tributary processing unit for multiplexing different services being multiplexed in different time slots (paragraph [0003] lines 14-15), and the cross module of the SDH equipment node transmits the signals of different time slots to corresponding line modules or other tributary modules (Fig. 1). Parruck et al. further disclose wherein the services to be sent from the local to the SDH side are mapped by the service processing units respectively (Fig. 3). Parruck et al. also suggest framer 123 which includes demapper (mapper for other way) for separating ATM cells (Fig. 3, 17) and MPLS packets (Fig. 3, 18) and the TDM (SERDES) (cross) to connect to the framer 123 (Fig. 5 and col. 13 lines 59-61).

Conclusion

4.   The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Hoch et al. (2003/0002505) discloses a physical processor 202

(SDH interface) including multiple service processing units (216, 218, 220) and a

multiple service cross processing unit 212 to interconnect among different services to

the local interfaces (Fig. 2).

5.   Applicant's amendment necessitated the new ground(s) of rejection presented in

this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37

CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not

mailed until after the end of the THREE-MONTH shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later

than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to HOANG-CHUONG Q. VU whose telephone number is

(571) 270-3945. The examiner can normally be reached on Monday through Thursday

8:30 AM to 6:00 PM EST. and alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, AYAZ R. SHEIKH can be reached on (571) 272-3795. The fax phone

number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/H. V./   11/14/2009
Examiner, Art Unit 2476
        /Ayaz R. Sheikh/
        Supervisory Patent Examiner, Art Unit 2476